L 12645-63

ACCESSION NR: AP3002702 S/0080/63/036/005/1057/1063

44

AUTHOR: Romanov, V. V.

TITLE: Analysis of the cause of zinc sponge formation in the electrolysis of zincate solutions

SOURCE: Zhurnal prikladnoy khimii, v. 36, no. 5, 1963, 1057-1063

TOPIC TAGS: zinc sponge formation, dendrite deposition, zinc deposition, zinc plating

ABSTRACT: Previous work by the author(Zh. P. Kh. Vol. 34, no. 12, 1961, 2692) showed that electrolysis of zincade solutions with variable half-wave current gave deposits without dendrites. The explanation for this,derived from the present work, is that with a constant current at low cathodic current densities, an insufficient number of easily discharged zinc particles (the less-hydrated zinc particles with a smaller negative charge), is admitted into the pre-cathodic layer. This is substantiated by addition of traces of Pb or other metals which catalytically decompose the more highly hydrated zinc. The variable current improves conditions for filling the precathodic layer with less hydrated Zn particles, either by diffusion from the main solution or by decomposition of the more hydrated

Card 1/2

KUDINOVA, N.I.; ROMANOV, V.V.

Effect of polarization on the corrosion cracking of brass in a mercury medium. Zhur. prikl. khim. 36 no.11:2465-2469 N '63. (MIRA 17:1)

ACCESSION NR: AR4015687 S/0081/63/000/023/0354/0354

SOURCE: RZh. Khimiya, Abs. 23K77

AUTHOR: Narushevich, N. I.; Balezin, S. A.; Romanov, V. V.

TITLE: Effect of some inhibitors on the resistance to corrosive cracking of aluminum alloy V-95

CITED SOURCE: Uch. zap. Mosk. gos. ped. in-t im. V. I. Lenina, no. 181, 1862, 183-199

TOPIC TAGS: corrosion, corrosion resistance, corrosion inhibitor, aluminum, aluminum corrosion, alloy V-95, aluminum alloy

TRANSLATION: It has been determined that it is possible, by means of inhibitors, to protect Al alloy V-95 from corrosive cracking in a mixture of 0.5 N H_2SO_4 with 35 g/l NaCl under stresses of 43 kg/mm^2. Corrosive cracking of the alloy is retarded most effectively by the following inhibitors (at 1% concentrations): DBS, thiourea, PB-5, BA-12 pyridine, K_4 [Fe(CN)6], KI. Their inhibitory effect is equal to 28, 15, 8.8, 7.3, 9.2, 6.4, and 5.7, respectively. A mixture of 1% DBS and 0.1% KI retards the disintegration

Card 1/2

ACCESSION NR: AR4015690 S/0081/63/000/023/0355/0355

SOURCE: RZh. Khimiya, Abs. 23K80

AUTHOR: Narushevich, H. I.; Balezin, S. A.; Romanov, V. V.

TITLE: The effect of inhibitors on corrosive cracking of aluminum alloy V-95

CITED SOURCE: Uch. zap. Mosk. gos. ped. in-t im. V. I. Lenina, no. 181, 1962, 341-355

TOPIC TAGS: corrosion, corrosive cracking, corrosion inhibitor, aluminum corrosion, aluminum alloy, alloy V-95

ABSTRACT: The protective action of the most effective inhibitors of corrosive cracking of Al-alloy V-95 in a mixture of 0.5 N H_2SO_4 with 35 g/l NaCl is related to retardation of the cathode reaction. The explanation presented of the effect of inhibitors on the corrosion process and corrosive cracking of the investigated alloy is based on electrochemical concepts as to the nature and mechanism of corrosive cracking of metals. Authors' summary

DATE ACQ: 09Jan64 SUB CODE: MM ENCL: 00

Card 1/1

ROMANOV, Vladislav Vasiljevic, inz.

Modern methods of electric signal recording. Sdel tech 11 no.11; 414-416 N'63.

L 46922-66 EWT(m)/EWP(w)/T/EWP(t)/ETI IJP(c) JD/WB/GD

ACC NR: AT6024977 (N) SOURCE CODE: UR/0000/65/000/000/0347/0353

38
B+1

AUTHOR: Kudinova, N. I.; Romanov, V. V.

ORG: none

TITLE: Nature of the brittle failure of steel in acid media

SOURCE: AN SSSR. Otdeleniye obshchey i tekhnicheskoy khimii. Zashchitnyye metallicheskiye i oksidnyye pokrytiya, korroziya metallov i issledovaniya v oblasti elektrokhimii (Protective metallic and oxide coatings, corrosion of metals, and studies in electrochemistry). Moscow, Nauka, 1965, 347-353

TOPIC TAGS: brittleness, stress corrosion, chromium steel, rupture strength/1Kh13 steel

ABSTRACT: The object of the study was to determine the nature of the decrease in the stress-rupture strength of a metal (1Kh13 chromium steel) under conditions where failure due to stress corrosion cracking and hydrogen brittleness is basically possible. To this end, the dependence of the rate of failure of 1Kh13 steel on the density of the polarizing current was studied in 0.1 N H_2SO_4 (containing 4 g/l Na_2S as the hydrogenation stimulator) at room temperature. The brittle failure of 1Kh13 steel under stress was found to be due to stress corrosion cracking and to be completely unrelated to the hydrogen brittleness. The view held by other authors that the nature of the failure of chromium steels in acid media is related to hydrogen brittleness is considered erroneous. A plot of the rate of brittle failure of the metal versus the density of the po-

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L 46322-66
ACC NR: AT6024977 O

larizing current, and comparison of this curve with a typical curve characterizing the analogous relationship in the stress corrosion cracking of metals permit one to make a reliable distinction between stress corrosion cracking and certain other destructive factors which may be acting during the corrosion of metals under stress. Orig. art. has: 3 figures and 1 table.

SUB CODE: 11/ SUBM DATE: 12Aug63/ ORIG REF: 010/ OTH REF: 010

Card 2/2 blg

L 46821-66 EWT(m)/EWP(w)/T/EWP(t)/ETI IJP(c) JD/WB/GD/JH
ACC NR: AT6024979 (N) SOURCE CODE: UR/0000/65/000/000/0415/0420

58
57
B+1

AUTHOR: Pushkina, S. V.; Romanov, V. V.

ORG: none

TITLE: Influence of stresses and temperature on the polarization effect associated with the corrosion fatigue of MA-2 magnesium alloy in chloride-chromate solution

SOURCE: AN SSSR. Otdeleniye obshchey i tekhnicheskoy khimii. Zashchitnyye metallicheskiye i oksidnyye pokrytiya, korroziya metallov i issledovaniya v oblasti elektrokhimii (Protective metallic and oxide coatings, corrosion of metals, and studies in electrochemistry). Moscow, Nauka, 1965, 415-420

TOPIC TAGS: magnesium alloy, stress corrosion, electric polarization, metallography, fatigue strength, MA-2 alloy

ABSTRACT: A study of the influence of cyclic stresses on the polarization effect associated with the corrosion-fatigue failure of MA-2 magnesium alloy (3.65% Al, 0.85% Zn, 0.50% Mn) in a solution containing 35 g/l NaCl + 20 g/l K_2CrO_4 at 25° showed that as the stress level decreases, the effectiveness of the polarization increases. Under the same conditions, with σ_{-1} = 21.4 kg/cm^2, the effectiveness of the polarization increases as the temperature is lowered from 25 to 5° and raised to 35°. Metallographic studies showed that both in the case of fatigue of MA-2 alloy in air and in the case of its corrosion fatigue in the NaCl-K_2CrO_4 solution, the failure is of composite, primarily intracrystalline character. Cathodic polarization shifts the corrosion-fatigue

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ACC NR: AT6024979

crack from the center of the grains toward the grain boundaries. Anodic polarization makes the failure purely intracrystalline in character. The nature and mechanism of the corrosion-fatigue failure of MA-2 alloy were similar under the selected conditions and during stress-corrosion cracking. In the presence of anodic polarization (contact of the part with a more noble metal), a drop of the cyclic stress level does not increase the corrosion-fatigue strength of the metal. Orig. art. has: 5 figures and 1 table.

SUB CODE: 11/ SUBM DATE: 20Feb64/ ORIG REF: 010/ OTH REF: 002

Card 2/2 blg

L 46835-66 EWT(m)/EWP(w)/T/EWP(t)/ETI IJP(c) JD/GD/JH

ACC NR: AT6024930 (N) SOURCE CODE: UR/0000/65/000/000/0421/0424

43
B+1

AUTHOR: Pushkina, S. V.; Romanov, V. V.

ORG: none

TITLE: Influence of stresses and temperature on the polarization effect associated with the corrosion fatigue of V-95 alloy in a solution of 0.05 N H_2SO_4 + 35 g/l NaCl

SOURCE: AN SSSR. Otdeleniye obshchey i tekhnicheskoy khimii. Zashchitnyye metallicheskiye i oksidnyye pokrytiya, korroziya metallov i issledovaniya v oblasti elektrokhimii (Protective metallic and oxide coatings, corrosion of metals, and studies in electrochemistry). Moscow, Nauka, 1965, 421-424

TOPIC TAGS: electric polarization, stress corrosion, aluminum alloy / V-95 alloy

ABSTRACT: The corrosion behavior of V-95 aluminum alloy subjected to symmetrical bending at 500 cycles per minute was studied in a solution of 0.05 N H_2SO_4 + 35 g/l NaCl to determine the influence of these stresses on the polarization effect involved in the corrosion fatigue of the alloy. It was found that as the stress level is lowered, the effectiveness of the cathodic and anodic polarization increases. As the temperature rises from 25 to 55° at σ_{-1} = 32 kg/mm^2, the effectiveness of cathodic polarization increases, and that of anodic polarization decreases somewhat. The failure of the alloy under the selected conditions has a composite, primarily intracrystalline character. The results prove the existence of a substantial influence of secondary

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L 46835-66
ACC NR: AT6024980 0

processes occurring at the electrodes on the polarization effect in corrosion fatigue. Orig. art. has: 2 figures.

SUB CODE: 11/ SUBM DATE: 21Dec64/ ORIG REF: 007

Card 2/2 blg

L 46839-66 EWT(m)/EWP(w)/EWP(j)/T/EWP(t)/ETI IJP(c) JD/WB/GD/RM/JH

ACC NR: AT6024981 (N) SOURCE CODE: UR/0000/65/000/000/0425/0429

48
B+1

AUTHOR: Pushkina, S. V.; Balezin, S. A.; Romanov, V. V.

ORG: none

TITLE: Effect of corrosion inhibitors on the corrosion fatigue of MA-2 alloy

SOURCE: AN SSSR. Otdeleniye obshchey i tekhnicheskoy khimii. Zashchitnyye metallicheskiye i oksidnyye pokrytiya, korroziya metallov i issledovaniya v oblasti elektrokhimii (Protective metallic and oxide coatings, corrosion of metals, and studies in electrochemistry). Moscow, Nauka, 1965, 425-429

TOPIC TAGS: corrosion inhibitor, corrosion protection, magnesium alloy, cathode polarization, cyclic strength /MA-2 alloy

ABSTRACT: The object of the work was to determine the influence of an inorganic and organic inhibitor on the corrosion fatigue of MA-2 magnesium alloy (in %: Al 3.65, Zn 0.85, Mn 0.5, bal. Mg) in a chloride-chromate solution (35 g/l NaCl + 20 g/l K_2CrO_4) at 25°C; to study the combined effect of cathodic polarization and corrosion inhibitors on this process; and to clarify the influence of corrosion inhibitors on the cathodic polarization effect involved in the corrosion-fatigue failure of MA-2 alloy in the selected corrosive medium. The specimens were subjected to symmetrical bending at 500 cycles per minute. It was found that sodium nitrite and benzoate effectively increase the resistance of MA-2 to corrosion-fatigue failure. This pro-

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ACC NR: AT6024981

tective action combines with the protective effect of cathodic polarization. At D_c = 1 mA/cm^2 and an $NaNO_2$ concentration of 20%, the cyclic strength of the alloy was 13.9% higher than in air. The nature and mechanism of the corrosion fatigue of the alloy in the chloride-chromate solution are largely electrochemical. Orig. art. has: 4 figures.

SUB CODE: 11,13/ SUBM DATE: 13Jan64/ ORIG REF: 009

Card 2/2 blg

L 46838-66 EWT(m)/EWP(w)/T/EWP(t)/ETI IJP(c) JD/WB/JH

ACC NR: AT6024982 (N) SOURCE CODE: UR/0000/65/000/000/0429/0434

AUTHOR: Pushkina, S. V.; Romanov, V. V.

53.
B+1

ORG: none

TITLE: Influence of the corrosive medium on the polarization effect associated with the corrosion fatigue of V-95 alloy

SOURCE: AN SSSR. Otdeleniye obshchey i tekhnicheskoy khimii. Zashchitnyye metallicheskiye i oksidnyye pokrytiya, korroziya metallov i issledovaniya v oblasti elektrokhimii (Protective metallic and oxide coatings, corrosion of metals, and studies in electrochemistry). Moscow, Nauka, 1965, 429-234

TOPIC TAGS: aluminum alloy, electric polarization, corrosion, V-95 alloy

ABSTRACT: The influence of sulfuric acid concentration in a system of NaCl + H_2SO_4 solutions on the polarization effect associated with the corrosion fatigue of V-95 aluminum alloy (in %: Zn 5.35, Mg 2.30, Cu 1.30, Mn 0.33, Cr 0.13, bal. Al) was investigated at two stress levels (symmetrical bending at 500 cycles per minute): (1) above the vibration strength in air (σ_{-1} = 32 kg/mm^2) and (2) close to it (σ_{-1} = 16 kg/mm^2). It was found that as the H_2SO_4 concentration increases at both stress levels, the effectiveness of cathodic and anodic polarization decreases. This decrease and that of the time to failure of the specimens with increasing H_2SO_4 concentration in NaCl solution in the absence of polarization are attributed to an increased effectiveness of

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L 46838-66

ACC NR: AT6024982

specific Evans corrosion couples as a result of the facilitation of the cathodic process. It is concluded that the electrochemical (corrosion) characteristics play a predominant role in the mechanism of corrosion fatigue of V-95 alloy in NaCl + H_2SO_4 solutions. When the effectiveness of the corrosion couples is low, secondary factors related to a change in the properties of the medium become superimposed on the cathodic polarization effect. Orig. art. has: 3 figures and 2 tables.

SUB CODE: 11/ SUBM DATE: 30Oct64/ ORIG REF: 006

Card 2/2 blg

ACC NR: AP6034027 SOURCE CODE: UR/0080/66/039/010/2261/2266

AUTHOR: Romanov, V. V.

ORG: none

TITLE: Methods of preparation of the positive electrode of a dry-charged silver-zinc storage battery

SOURCE: Zhurnal prikladnoy khimii, v. 39, no. 10, 1966, 2261-2266

TOPIC TAGS: storage battery, silver zinc battery, battery component, electrode, silver, electrode design

ABSTRACT: Experiments were described which showed that the time required for starting a silver-zinc storage battery may be cut to 24 hr by preforming of the positive (silver) electrode. The preparation and preforming of silver electrodes were described. The silver electrodes were made of compressed silver powder and preformed in KOH electrolyte by application of asymmetric current during two charge periods. The experimental dry-charged battery with 0.6 A-h, which contained the silver electrode preformed as described, during 10 cyclings showed a performance superior to that of a battery in which the silver electrodes were made of chemically prepared silver dioxide. The utilization factor of silver in the same dry-charged battery was the highest (72.5%) with the positive electrode made of silver powder which was prepared by thermal decomposition of silver acetate. These electrodes

UDC: 621.355.9

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ACC NR: AP6034027

exhibited a utilization factor 15—20% higher than the electrodes made of industrial silver powder, i.e., prepared by thermal decomposition of silver oxide. Orig. art. has: 3 figures and 1 table.

SUB CODE: 10/ SUBM DATE: 26Dec61/ ORIG REF: 002/ OTH REF: 007

Card 2/2

L 00902-67 EWT(m)/T/EWP(t)/ET IJP(c) JD/WB/JH

ACC NR: AP6020914 SOURCE CODE: UR/0369/66/002/002/0180/0182

AUTHORS: Narushevich, N. I.; Balezin, S. A.; Romanov, V. V.

ORG: Institute of Metallurgy im. A. A. Baykov, Moscow (Institut metallurgii)

TITLE: The effect of a corrosion inhibitor on the polarization effect in corrosion cracking of V95 aluminum alloy

SOURCE: Fiziko-khimicheskaya mekhanika materialov, v. 2, no. 2, 1966, 180-182

TOPIC TAGS: corrosion inhibitor, corrosion, corrosion rate, aluminum alloy, cathode polarization, current density, electrolyte / V95 aluminum alloy

ABSTRACT: The results of a study of the effect of polarization on the rate of corrosion cracking of V95 aluminum alloy are given. Standard sheet alloy with a thickness of 1.5 mm was used. The chemical composition of the alloy, the preparation of the specimens, and the testing conditions were described earlier by N. I. Narushevich, S. A. Balezin, and V. V. Romanov (Ingibitory korrozii metallov, Uchenyye zapiski MGPI im. V. I. Lenina, No. 2, M., 1962). The tests were made under a load $\sigma_{0.2}$ = 43 kg/mm^2 at a temperature of 23C. The corrosive medium was a 0.5-N solution of H_2SO_4 + 35 g/liter NaCl, and the inhibitor was an admixture of 0.2% $K_4[Fe(CN)_6]$. Cathode polarization in the absence of an inhibitor at low current densities accelerates corrosion (see Fig. 1). The obtained data confirmed the electrochemical

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L 00902-67
ACC NR: AP6020914

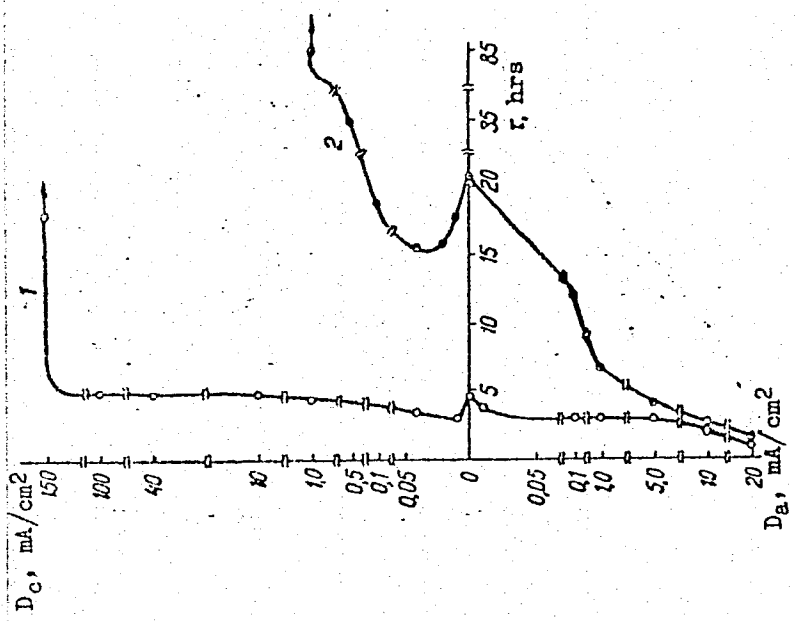

Fig. 1. Influence of inhibitor on characteristic shape of polarization curve in corrosion cracking of V95 alloy in 0.5-N solution of H_2SO_4 + 35 g/liter NaCl: 1 - polarization in starting electrolyte; 2 - with addition of 0.2% $K_4[Fe(CN)_6]$ to electrolyte.

nature of the corrosion cracking of aluminum alloy in a weakly acid aggressive medium. Orig. art. has: 1 graph.

awm

Card 2/2 SUB CODE: 11/ SUBM DATE: 28Jul65/ ORIG REF: 006/ OTH REF: 007

ROMANOV, V.V.

Theory of electrolysis by ripple current. Zhur. prikl. khim. 36 no.5:1050-1056 My '63. (MIRA 16:8)

(Electrolysis)

ROMANOV, V.V.

Investigating the causes of the formation of a zinc spongy coating during the electrolysis of zincate solutions. Zhur. prikl. khim. 36 no.5:1057-1063 My '63. (MIRA 16:8)

(Electrolysis) (Zincates)

L 3292-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JD/JG/WB

ACC NR: AP6020915 SOURCE CODE: UR/0369/66/002/002/0183/0187

AUTHOR: Drits, M. Ye.; Kadaner, E. S.; Orekhova, A. N.; Romanov, V. V.

ORG: Institute of Metallurgy im. A. A. Baykov (Institut metallurgii)

TITLE: Effect of small additions of copper and silver on corrosion of Al-Zn-Mg alloys

SOURCE: Fiziko-khimicheskaya mekhanika materialov, v. 2, no. 2, 1966, 183-187

TOPIC TAGS: aluminum alloy, zinc containing alloy, magnesium containing alloy, copper containing alloy, silver containing alloy, alloy corrosion, stress corrosion, corrosion resistance

ABSTRACT: Cold- and hot-rolled sheets (2.5 mm thick) of high strength Al-Zn-Mg alloy containing a total of 7.5% Zn and Mg at a Zn/Mg ratio of 2, 0.6% Mn, 0.15% Zr, 0.2% Fe and 0.1% Si, and additionally alloyed with 0.3% each Cu and Ar, were tested for resistance to general and stress corrosion. Test specimens were solution annealed at 450C for 30 min, water quenched, and aged at 140C for 24 hr (temper T6) which ensured the highest strength characteristic of the alloy. Stress tests done in a 30 g/l NCl + 20 g/l $NaHCO_3$ solution under a stress equal to 0.8 of the yield strength showed that the initial alloy failed in 23 hr,

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SUB CODE: 11/ SUBM DATE:

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L 10452-66 EWT(1)/EWA(h)
ACC NR: AR5027567 SOURCE CODE: UR/0274/65/000/008/B071/B071

SOURCE: Ref. zh. Radiotekhnika i elektrosvyaz', Abs. 8B508

AUTHOR: Romanov, V. V.

TITLE: Placing electric charges on a dielectric surface for electrostatic recording of signals

CITED SOURCE: Tr. Uchebn. in-tov svyazi. M-vo svyazi SSSR, vyp. 23, 1964, 183-193

TOPIC TAGS: electrostatic recording, electric charge

TRANSLATION: The mechanism of placing charges on a dielectric surface for purposes of electrostatic recording is considered. It is demonstrated that field emission or gas discharge or both may occur depending on the air-gap length and the electrode voltage. The air-gap current required for charge placing is calculated, and some ideas about possible rate of recording are submitted.

SUB CODE: 09

Card 1/1 pw

UDC: 621.391.145:772.932

L 2658-66 EWT(m)/EPF(c)/EWA(d)/EWP(t)/EWP(z)/EWP(b) IJP(c) MJW/JD/WB/GS

ACCESSION NR: AT5023093 UR/0000/65/000/000/0130/0136

AUTHOR: Romanov, V. V.

TITLE: Effect of calcium, manganese, cadmium, tin, lead, and bismuth on the resistance of magnesium to corrosion cracking

SOURCE: Problemy bol'shoy metallurgii i fizicheskoy khimii novykh splavov (Problems of large-scale metallurgy and physical chemistry of new alloys); k 100-letiyu so dnya rozhdeniya akademika M. A. Pavlova. Moscow, Izd-vo Nauka, 1965, 130-136

TOPIC TAGS: magnesium, corrosion cracking, solid solution, corrosion resistance, electrochemical analysis

ABSTRACT: The present article is a continuation of a previous investigation (V. V. Romanov, ZhPKh, 35, 3, 795, 1952) with the difference that it provides data on the effect of certain other elements (in the solid-solution range) on resistance to corrosion cracking and corrosion of Mg in a 35 g/liter NaCl solution as well as in the same solution acidified with 0.01 N H_2SO_4 in the presence of stresses equal to 0.81% of yield point. It is established that: a) within

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ACCESSION NR: AT5023093

12

the limits of the solid solution Cd and Mn cause no corrosion cracking of Mg; b) within the same limits, Pb, Sn, and Bi cause corrosion cracking of the metal. On the basis of these findings, as well as of those of the previous investigation, the investigated elements may be classified as follows according to the degree to which they reduce the resistance of Mg to corrosion cracking: Zn > Cu > Al, Bi > Sn >> Ca, Cd, Mn. Since the investigated elements did not appreciably affect the strength properties of Mg, their effect on the resistance of Mg to corrosion cracking is tentatively associated with their effect on the electrochemical characteristics of this metal or, more exactly, in physical terms, on the properties of the protective films. Any more detailed evaluation of these findings is considerably more difficult than in the previous investigation, because of the lack of exhaustive data on the effect of the investigated elements on the electrochemical inhomogeneity of the structure formed by alloying, as well as on the mechanism of this effect on the corrosion of Mg in the media selected."The author is indebted to V. V. Dobrolyubov and L. N. Tarasova for their assistance in performing the experimental part of this project. Orig. art. has: 10 tables.

ASSOCIATION: none

44,55 44,55

SUBMITTED: 00 ENCL: 00 SUB CODE: MM,

NO REF SOV: 005 OTHER: 001

Card 2/2

L 2657-66 EWT(m)/EPF(c)/EWA(d)/EWP(j)/T/EWP(t)/EWP(z)/EWP(b) IJP(c) MJW/JD/WW/WB/GS/RM

ACCESSION NR: AT5023094 UR/0000 /65/000/000/0137/0151

AUTHOR: Narushevich, N. I.; Balezin, S. A.; Romanov, V. V.

TITLE: Nature and mechanism of the effect of corrosion inhibitors on the corrosion cracking of magnesium alloys

SOURCE: Problemy bol'shoy metallurgii i fizicheskoy khimii novykh splavov (Problems of large-scale metallurgy and physical chemistry of new alloys); k 100-letiyu so dnya rozhdeniya akademika M. A. Pavlova. Moscow, Izd-vo Nauka, 1965, 137-151

TOPIC TAGS: corrosion inhibitor, magnesium base alloy, organic salt, sodium compound, electrochemical analysis, potassium compound

ABSTRACT: Specimens of the Mg-base alloy MA2-1 (4.43% Al, 1.12% Zn, 0.56% Mn, 0.006% Fe, 0.07% Si, 0.03% Cu, 0.0011% Ni, 0.002% Be), cut out of 1.5 mm thick sheets, were tested for corrosion cracking in a 35 g/liter NaCl + 20 g/liter K_2CrO_4 solution in the presence of tensile stresses in order to determine the effect of different inhibitors of corrosion cracking. Organic and inorganic

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ACCESSION NR: AT5023094

inhibitors were used. The corrosion rate was determined by the gravimetric method with measurement of the maximum depth of corrosion foci, as well as with calculation of the number of corrosion pits on the surface of the specimen. Such organic inhibitors as phosphates, fluorides, silicates, and nitrates, when added in 1% concentration to the tested solution, proved to be satisfactory inhibitors of corrosion cracking, since not one of the tested specimens became corroded during the first 1.5-3 days whereas the control specimens became corroded within 2.5 min. Other salts ($K_4Fe(CN)_6$, $K_3Fe(CN)_6$, KI, $Na_2B_4O_7$), which are good inhibitors of the corrosion cracking of aluminum alloys, do not affect the cracking of this Mg alloy. Of the organic compounds investigated, the best results were produced by the sodium salts of butyric, caproic, and benzoic acids, since they completely halted the process of the corrosion cracking of the alloy MA2-1 in the solution specified above. It was found that the effectiveness of salts of acids in the fatty series is in inverse proportion to the increase in the number of the functional groups (-COOH, -OH). Inhibitors were also tested in different combinations. Thus, sodium benzoate and sodium nitrite, taken in concentrations (0.5 and 1.5%) which do not assure reliable protection, when jointly added to the working solution, provide complete protection against the corrosion cracking of

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L 2657-66

ACCESSION NR: AT5023094

the alloy MA2-1. During the second part of the experiments, the electrochemical behavior of the alloy MA2-1 in the same working solution was investigated in the presence of selected inhibitors. It was established that different inhibitors differently affect the electrode potential and the kinetics of electrode processes: some, such as $NaNO_2$, inhibit the anodic process, while others, such as Na_2HPO_4 and monoethanolamine benzoate, inhibit the cathodic process, and others still, such as NaF and $NaC_7H_5O_2$ affect both processes simultaneously. Monoethanolamine benzoate, moreover, not only is a satisfactory corrosion retardant but also assures a more uniform rate of corrosion. Orig. art. has: 5 figures, 3 tables.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 010 OTHER: 000

Card 3/3

ROMANOV, V.V.

Quantitative evaluation of the corrosive fatigue of metals. Zashch.met. 1 no.4:391-395 Jl-Ag '65. (MIRA 18:8)

1. Institut metallurgii imeni A.A.Baykova AN SSSR, Moskva.

ROMANOV, V.V.

Parameters of an electrostatic method for recording electrical signals. Trudy ucheb. inst. sviazi. no.1 :147-152 '63. (MIRA 17:10)

1. Leningradskiy elektrotekhnicheskiy institut svyazi im. prof. M.A.Bonch-Bruyevicha.

[illegible], [illegible]; [illegible], [illegible]; [illegible], [illegible]; [illegible], [illegible]; [illegible], V.V.

Fundamentals of the efficient organization and control of petroleum production. Nauch.-tekh. sbor. po dob. nefti no.25:147-149 '64. (MIRA 1?:12)

1. Vsesoyuznyy neftegazovyy nauchno-issledovatel'skiy institut.

ADMIN-L, V V

SOV/ 124-58-5-5573

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 5, p 94 (USSR)

AUTHOR: Romanov, V. V.

TITLE: Evaporation Computation by Means of a Simplified Heat-balance Method (Raschet ispareniya po uproshchennomu metodu teplovogo balansa)

PERIODICAL: Tr. gos. gidrolog. in-ta, 1956, Nr 54 (108), pp 75-79

ABSTRACT: This is a preliminary communication on the results obtained from a simplified heat-balance method for the estimation of evaporation. The suggested simplifications consist of the following:- 1) The expression for the evaporation (in mm/hr)

$$u = (R_\delta - Q_n)/[60(1 + 0,64\Delta T/\Delta e)]$$

in terms of the radiation balance R_δ, flow of heat into the ground Q (cal/cm^2 hr), and the differences in temperature ΔT(°C) and water-vapor pressure Δe (mb) at two levels in the atmospheric surface layer is directly applied to the monthly averages for every hour of a 24-hour period. Here:-2) The heat transfer into the ground Q_n is disregarded at first, but

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Evaporation Computation by Means of a Simplified Heat-balance Method

then an approximated correction of the Q_n effect is introduced. This Q_n value is obtained by replacing the denominator of equation (1) with its monthly average value (24 mean values for each hour of the day). 3) The differences ΔT and Δe are determined from the readings of the thermographs and the hygrographs installed at the two levels. 4) The radiation balance R_δ is not obtained through instrument readings, but is calculated from the standard meteorological data, viz., $R_\delta = R_a - R_e$ where the absorbed radiation R_a is determined by A. P. Braslavskiy's and Z. A. Vakulina's empirical formula [Normy isparemiya s poverkhnosti vodokhranilishch (Water-reservoir Surface-evaporation Rates). Gidrometeoizdat, 1954] and the effective radiation R_e according to T. V. Kiriilova's and Ye. D. Kovaleva's nomograms. [Tr. Gl. geofiz. observ., 1951, Nr 27 (89)]. As a direct result of these simplifications the use of special instruments (remotely reading psychrometers, radiation-balance meters) is avoided, as well as the hourly calculations and the ensuing monthly-mean averaging. The sources of discrepancies resulting from the use of the proposed method are analyzed. Calculations are performed according to the simplified method. The averaged results of the calculations agree well with the results obtained by means of the water-balance method. No comparison is made with the results obtained by the usual heat-balance method. Comments by the reviewer:- Among the sources of discrepancies

Evaporation Computation by Means of a Simplified Heat-balance Method

listed, the application of the nonlinear equation (1) to the averaged data is not mentioned. The corresponding discrepancy is small only when the 24-hour cycle of all the quantities entering into this equation varies only slightly over the given monthly observational period.

L. S. Gandin

1. Evaporation--Mathematical analysis
2. Evaporation--Temperature factors
3. Evaporation--Meteorological factors

IVANOV, K.Ye., doktor geogr. nauk, prof.; ROMANOV, V.V., kand. tekhn. nauk; SIDORKINA, L.M., kand.geogr. nauk; SHIFMAN, N.M., inzh.; BAVINA, L.G., inzh.; GALINOVSKAYA, I.A., inzh.; KOZHINA, Z.M., red.; CHEPELKINA, L.A., red.; SHATILINA, M.K., red.; BRAYNINA, M.I., tekhn. red.

[Hydrological calculation in the drainage of bogs and swampy soils] Gidrologicheskie raschety pri osushenii bolot i zabolochennykh zemel'. Pod red. K.E.Ivanova. Leningrad, Gidrometeoizdat, 1963. 447 p. ___[Supplement no.9. Maps] Prilozhenie no.9. Karty. (MIRA 16:12)

1. Leningrad. Gidrologicheskiy institut.
(Drainage)

1. ROMANOV V.V., ROZHANSKAYA, O.D.

2. USSR (600)

"Result of a Study of the Physical Properties of the Frozen Layer of Swamps." Trudy GGI, Issue 7, (61) 1948 (63-105).

9. Meteorologiya i Gidrologiya, No. 3, 1949. [redacted] Report U-2551, 30 Oct 52

ROMANOV, V.V.

Methods for determining water resources in an active layer and calculation of water cycles of swamps located on an elevated relief. Trudy GGI no.39:96-115 '53. Trudy GGI no.39:96-115 '53.
(MIRA 11:4)

(Swamps)

ROMANOV, V.V.

Studying evaporation from sphagnous swamps. Trudy GGI no.39:116-135 '53. (MIRA 11:4)

(Swamps) (Evaporation)

SOV/124-57-4-4493

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 4, p 90 (USSR)

AUTHOR: Romanov, V. V.

TITLE: On the Problem of the Relationship Between Capillary and Seepage Properties of Coarsely Porous, Structureless Soils (K voprosu o zavisimosti mezhdu kapillyarnymi i fil'tratsionnymi svoystvami krupnoporistykh besstrukturnykh gruntov)

PERIODICAL: Tr. Gos. gidrolog. in-ta, 1955, Nr 48, pp 146-155

ABSTRACT: Presentation of an approximate method of determining the permeability coefficient K for soil seepage and the flow rate of a capillary fluid flow rising to a height h above the ground-water table. The soil is regarded as a bank of capillary tubes of different diameters completely filled with liquid to a height $h = 2\sigma / r\gamma$ (1), where r is the radius of a pore reduced to a circular cross section. A hyperbolic relationship for the vertical distribution of the liquid under conditions of capillary rise was established on the basis of the assumption that the distribution of pores along the diameters is uniform, that the areas of different groups of pores having various diameters are equal, and that the cross-sectional area of water-filled

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On the Problem of the Relationship Between Capillary and Seepage (cont.)

pores at a height h is proportional to the moisture content at the same height. It should be noted that the assumed hyperbolic moisture distribution under conditions of capillary rise is in contradiction with laboratory and field observations [e. g., see Rode, A. A., Pochvennaya vlaga (Soil Moisture), Moscow, Izd-vo AN SSSR, 1952; Kovda, V. A., Proiskhozhdeniye i rezhim zasolennykh pochv (Origin and Behavior of Saline Soils), Vol I, Moscow, Izd-vo AN SSSR, 1946]. By taking into consideration the assumptions listed above, it is shown that it is possible to construct a curve w(r) representing the distribution of the soil pores by employing equation (1) in conjunction with a curve w(h) of the vertical distribution of moisture under conditions of capillary rise; in the process a "measure of the abundance of soil pores with radii smaller than a prescribed radius r_i", $a_1 = \Delta w_i / \Delta r_i$, is introduced, and it is suggested that a curve a(r) be plotted for the purpose of defining the distribution of pores. Utilizing the distribution curve, the author proposes the following two methods for the determination of the permeability coefficient K: 1) In cases when a soil with an unknown value of K possesses a pore-distribution curve that is geometrically similar to that of a soil for which the value of the permeability coefficient K_1 is known, the Kozeny expression for the relationship between K and the porosity (m) is adopted and leads to the expression

On the Problem of the Relationship Between Capillary and Seepage (cont.)

$$K/K_1 = \left(\frac{m}{m_1}\right)^3 \left(\frac{1-m_1}{1-m}\right)^2 \qquad (2)$$

Formula (2) can not be considered justified, because it does not take into consideration the fact that according to Kozeny the magnitude of K is a function not only of m but of the size of the soil particles (viz., the square of the effective diameter of the particles) as well; 2) in other instances, when the piezometric gradient I = 1 and the area of the cross section of the current F = 1, the value of K, which is equal numerically to the flow, is computed as a sum of the various flows Q_i passing (independently of each other) through pores with different radii; $Q_i = Br_i^2 \Delta w_i$ where B = constant, Δw_i is taken from the w(h) curve for various values of h_i, and r_i is determined in accordance with formula (1). The magnitude of the "capillary-flow rate at a height h" is computed with the aid of the formula

$$Q_k = \Sigma Q_{ki} \qquad \left(Q_{ki} = Q_i \frac{H_i - h}{h}\right) \qquad (3)$$

where H_i is the maximum height of capillary rise in pores having a radius of r_i. The article does not provide an explanation of the type of motion involved. The gradient

On the Problem of the Relationship Between Capillary and Seepage (cont.)

assumed corresponds to the case of a cut made through the soil at a height h above the level of the water table, maximal capillary forces, expressed in terms of the magnitude H_i, being developed in the plane of the cut. Some selected computational examples are given. No use is made of the latest works published abroad and based on analogous considerations with regard to the utilization of the curves of pore distribution (RZhMekh, 1954, abstract 2220; Collis-George N., Soil Sci., 1953, Vol 76, pp 239-250, etc.). Bibliography: 10 references.

S. F. Aver'yanov

Romanov, V. V.

14-1-514

Translation from: Referativnyy Zhurnal, Geografiya, 1957, Nr 1, p. 57 (USSR)

AUTHOR: Romanov, V. V.

TITLE: Calculation of Evaporation According to a Simplified Method of Thermal Balance (Raschet isparenlya po uproshchennomu metodu teplovogo balansa)

PERIODICAL: Tr. Gos. Gidrol. in-ta, 1956, Nr 54 (108), pp. 75-79

ABSTRACT: The problem consists in finding a solid basis for a simplified method of calculating evaporation for a period of about a month and more according to the thermal balance of the underlying surface. For such periods the following equation was made:

$$U = (R_\sigma - Q_\pi)/60(1+0.64\,\Delta T/\Delta e),$$

where U = evaporation, mm/ hour; R_σ = the radiation balance of the surface, cal/hr cm^2; Q_π = the heat flow through the surface of the soil, cal/hr cm^2; Δe = the

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Calculation of Evaporation According to a Simplified Method of Thermal Balance

he difference between the absolute humidity of the air at 2 heights (average per hour), Δd ; ΔT = the difference between the air temperature at the same altitudes as an hourly average. The last two quantities may be obtained from readings of thermographs and hygrographs placed at two different levels, instead of using the expensive, long range apparatus necessary for calculation of shorter periods. The quantity can either be discarded or calculated from data obtained by observation of soil temperature. The radiation balance $R_{\sigma} = R_{п} - R_{эф}$, where $R_{п}$ = the absorbed radiation and $E_{эф}$ = the effective soil radiation, is calculated according to standard metereological observations. Evaporation is calculated by formula (1), and the quantities obtained for hourly evaporation are totaled up for a 24 hour period and multiplied by the number of days in a given month. Between 1951 and 1953, calculation of evaporation at one of the marshy areas in the upper

Calculation of Evaporation According to a Simplified Method of Thermal Balance

Leningradskaya oblast' showed that the average evaporation of the total area during the May-September periods for the 3 years was 410 mm. Compari with the figures given for the water balance showed a discrepancy of 3.5% for 1951, but was less than 1% for the 3 years. The advantage of the proposed method consists in the fact that it requires only little work and inexpensive apparatus.

A. B.

ASSOCIATION: State Hydrological Institute (Gos. gidrol. in-t.)

Романов, В. В.

ROMANOV, V.V.

Evaporation from drained and undrained swamps. Trudy GGI no.60:20-42 '57. (MIRA 10:12)

(Evaporation) (Swamps)

GONCHAROVA, V.I.; ZAV'YALOVA, I.N.; PETROVA, I.A.; ROMANOV, V.V.; RYVKINA, V.B.

Some problems in the hydrology of swamps. Trudy GGI no.60:43-76 '57. (MIRA 10:12)
(Swamps) (Hydrology)

ROMANOV, V.V.

Role of winds in the evaporation process from swamps. Trudy GGI no.60: 77-85 '57. (MIRA 10:12)

(Evaporation) (Swamps) (Winds)

ROMANOV, V. V.

"Water Balance of Swamps in the European Parts of the USSR"

report presented at the 3rd All-Union Hydrological Congress, 7-17 Oct 1957, Leningrad.

(Izv. Ak Nauk SSSR, ser geograf., 3, pp3-9, '58)

UKRAINA, V. V. V.

3(7) PHASE I BOOK EXPLOITATION SOV/2384

Konferentsiya po agrometeorologii i agroklimatologii Ukrainskoy SSR

Materialy konferentsii (Material of the Conference on Agricultural Meteorology and Climatology of the Ukrainian SSR) Leningrad, Gidrometeoizdat, 1958. 247 p. Errata slip inserted. 700 copies printed.

Sponsoring Agencies: USSR. Glavnoye upravleniy gidrometeorologicheskoy sluzhby, Ukrainian SSR. Ministerstvo sel'skogo khozyaystva. Ukrainskiy nauchno-issledovatel'skiy gidrometeorologicheskiy institut, and Ukrainskaya akademiya sel'skokhozyaystvennykh nauk.

Resp. Ed.: G.P. Prikhot'ko; Ed.: V.D. Pisarevskaya; Tech. Ed.: N.I. Braynina.

PURPOSE: This book is intended for agriculturists, agrometeorologists, and instructors in related fields.

COVERAGE: This collection of articles deals with problems in agricultural meteorology in the Ukraine. Among the topics discussed are: wintering, planting time for winter crops, corn cultivation, potato degeneration, moisture supply, and adverse weather factors. References accompany individual articles.

/3

Romanov, V.V.

3(5,7) PHASE I BOOK EXPLOITATION SOV/[illegible]

Vsesoyuznyy gidrologicheskiy s"yezd, 3d, Leningrad, 1957.

Trudy...t. III: [illegible] (Transactions of the Third All-Union Hydrological Conference. v. 3: Hydrophysics [illegible]) Leningrad, Gidrometeoizdat, 1959. 470 p. Errata slip inserted. 2,000 copies printed.

Sponsoring agency: Glavnoye upravleniye gidrometeorologicheskoy sluzhby pri Sovete Ministrov SSSR.

Resp. Ed.: V.A. Uryvayev; Ed.: V.S. Protopopov; Tech. Ed.: M.I. Braynina.

PURPOSE: This work is intended for meteorologists, hydrologists, and hydrophysicists, particularly those engaged in the study of snow and ice and evaporation processes.

COVERAGE: This book contains papers on hydrophysics which were presented and discussed at the Third All-Union Hydrological Conference in Leningrad, October 1957. The Conference published 10 volumes on various aspects of hydrology of which this is number 3. The editorial board in charge of the series include: V.A. Uryvayev (Chairman), O.A. Alekin, Ye.V. Bliznyak (deceased), O.N. Borsuk, M.A. Velikanov, L.K. Davydov, A.P. Domanitskiy, G.P. Kalinin, S.N. Kritskiy, B.I. Kudelin, L.F. Manoim, M.P. Menkel', B.P. Orlov, I. V. Popov, A.K. Proskuryakov, D.L. Sokolovskiy, O.A. Spengler, A.I. Chebotarev, and S.K. Cherkavskiy. This volume is divided into 2 sections: the first contains reports from the subsection for the study of evaporation processes, and the second contains reports from the snow and ice subsection. References accompany each article.

1/2

IZRAEL', Yu. A.; KOLESNIKOVA, V. N.; ROMANOV, V. V.; SOYFER, V. N.

Tritium content in glaciers. Dokl. AN SSSR 156 no. 1:72-73 My '64. (MIRA 17:5)

1. Institut prikladnoy geofiziki Glavnogo upravleniya gidrometeorologicheskoy sluzhby pri Sovete Ministrov SSSSR, Institut matematiki AN UzbSSSR i Vsesoyuznyy nauchno-issledovatel'skiy institut yadernoy geofiziki i geokhimii Gosudarstvennogo geologicheskogo komiteta.

ROMANOV, Vladimir Vasil'yevich; IVANOV, K.Ye., doktor geogr. nauk, otv. red.; DERYUGINA, V.N., red.; SERGEYEV, A.N., tekhn. red.

[Evaporation from swamps in the European part of the U.S.S.R.] Isparenie s bolot Evropeiskoi territorii SSSR. Leningrad, Gidrometeoizdat, 1962. 227 p. (MIRA 15:9)
(Swamps) (Evaporation)

KUZ'MIN, Prokopay Pavlovich; ROMANOV, V.V., kand. tekhn. nauk, otv. red.; DERYUGINA, V.N., red.; BRAYNINA, M.I., tekhn. red.

[The process of the melting of snow] Protsess taianiia snezhnogo pokrova. Leningrad, Gidrometeor.izd-vo, 1961. 344 p. (MIRA 15:1)

(Thawing) (Snow)

BULAVKO, Arseniy Grigor'yevich; ROMANOV, V.V., kand. tekhn. nauk, red.; BLINNIKOV, L.V., red.; ZARKH, I.M., tekhn. red.

[Effect of the drainage of swamps on the elements of water balance in rivers of the White Russian Polesye] Vliianie osusheniia bolot na elementy vodnogo balansa rek Belorusskogo Poles'ia. Pod red. V.V.Romanova. Moskva, Gisdrometeor. izd-vo, 1961. 150 p. (MIRA 14:6)

(Polesye--Rivers)

ACCESSION NR: AT4004735 S/2922/63/007/000/0284/0288

AUTHOR: Romanov, V.V.

TITLE: Variation in the water and heat balance of swamps during their reclamation

SOURCE: Vses. nauchn. meteorologich. soveshch. Trudy*, v.7. Fizika prizemnogo sloya. Leningrad, 1963, 284-288

TOPIC TAGS: meteorology, swamp evaporation, swamp reclamation, heat transfer, heat balance, radiation balance, micrometeorology, hydrometeorology, water balance, swamp thermal equilibrium

ABSTRACT: Since about 10% of the Soviet Union consists of swampy areas, the study of swamp water and heat balance and the changes after reclamation contributes significantly to the knowledge of the moisture and heat transfer process over the Soviet Union. The heat balance method is applied to this problem. The evaporation value for one growth season for oligotrophic and marshy swamps is established for the various meteorological stations. Prior studies of water expenditure do not assure maximum efficiency of soil cultivation. It is more useful to study what water expenditure can assure a maximum of crops and what methods are needed to maintain the desired water

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ACCESSION NR: AT4004735

expenditure level. Of the 4 factors determining evaporation intensity, only the quantity of energy flow and the phases of plant development are judged important. Seasonal evaporation calculations indicate a definite correlation between quantity of evaporation and precipitation. Upon reclamation, but prior to agricultural use, heat expenditure for evaporation decreases 25-35% and the turbulent heat flow increases twofold. Evaporation from reclaimed areas put to agricultural use varies with a number of factors. It is proved that the evaporation quantity of the reclaimed swamps is 92-99% of the evaporation quantity of the marshy swamps. The intensive cultivation of the latter does not influence the water and, consequently, heat balance over an average of many years. A significant redistribution of the balance in seasonal terms for reclaimed areas under cereal crops does occur. The evaporation quantity for reclaimed areas under cereal crops is compared with that under perennial grasses. Orig. art. has: 4 tables.

ASSOCIATION: GGI

Card 2/3

ROMANOV, Vladimir Vasil'yevich; POPOV, I.V., otv. red.; SHATILINA, M.K., red.; BRAYNINA, M.I., tekhn. red.

[Hydrophysics of swamps] Gidrofizika bolot. Leningrad, Gidrometeor. izd-vo, 1961. 356 p. (MIRA 14:9)
(Swamps)

ROMANOV, V.V., kand.tekhn.nauk

Variations in the water balance of bogs in dry and wet years. Trudy GGI no.89:5-36 '60. (MIRA 13:10)
(Peat bogs) (Water, Underground)

ACC NR: AP7004[illegible] (N) SOURCE CODE: UR/0369/66/002/006/0621/0623

AUTHOR: Drits, M. Ye.; Kadaner, E. S.; Romanov, V. V.

ORG: Institute of Metallurgy im. A. A. Baykov AN SSSR, Moscow (Institut metallurgii AN SSSR)

TITLE: Effect of copper and chromium on the corrosion properties of Al-Zn-Mg alloys

SOURCE: Fiziko-khimicheskaya mekhanika materialov, v. 2, no. 6, 1966, 621-623

TOPIC TAGS: aluminum ~~zinc magnesium~~ base alloy, magnesese containing alloy, zirconium containing alloy, copper containing alloy, chromium containing alloy, ~~alloy~~ corrosion resistance, ~~alloy~~, property, stress corrosion, corrosion rate, corrosion resistant alloy, mechanical

ABSTRACT: Ingots of Al-Zn-Mg aluminum alloys containing (%) 5 Zn, 2.5 Mg, 0.2—0.5 Mn, 0.15 Zr, additionally alloyed with up to 0.75% Cu and/or 0.16% Cr were hot and cold rolled into 2.5 mm-thick sheets. The sheets were solution annealed at 450C, quenched, naturally aged for 7 days or artificially aged at 100C for 10 hr or at 140C for 24 hr, and then tested for mechanical properties and corrosion resistance. Corrosion tests were done in a solution of 30 g/l of NaCl + 20 g/l of $NaHCO_3$. The general corrosion rate was investigated on specimens fully submerged for 200 hr. The stress corrosion was investigated on specimens under a tensile stress equal to 90% of the yield strength for 500 hr. The stressed alloys, without Cu or Cr additions, aged at 100 and 140C

Card 1/2 UDC: none

ACC NR: AP7004179

failed after 45—68 and 66—124 hr, respectively. Addition of 0.03% Cu increased the life of the specimens of the alloys aged at 140C to 91—131 hr but had a negligible effect on alloys aged at 100C. Chromium additions increased the stress corrosion of the alloys more than copper additions, expecially of the alloys aged at 100C. Chromium also lowered the corrosion rate, while copper accelerated it in unstressed specimens. In combined alloying with Cr and Cu, additions of 0.3% Cu to alloys with a constant Cr content increased the life of the alloy specimens to more than 500 hr. An alloy containing 0.5% Cu aged at 100C for 100 hr had the highest stress corrosion resistance (more than 550 hr). The stress corrosion of all other alloys increased with aging at 140C. Copper additions increased the stress corrosion resistance of Al-Zn-Mg alloys with chromium substantially more than that of alloys without chromium. For example, 0.3% copper addition had practically no effect on the life of Al-5% Zn-2.5% Mg-0.5% Mn-0.15% Zr, while the same addition of copper to the alloy with 0.16% Cr increased its life by several times, even at a lower (0.2%) manganese content. Combined alloying with Cu and Cr increased the tensile strength of the initial alloy from 48.5 to 51.7 kg/mm^2, the yield strength from 38.5 to 40.5 kg/mm^2, and the elongation from 13.1 to 31.7%. Orig. art. has: 2 tables. [MS]

SUB CODE: 11/ SUBM DATE: 08Jun66/ ORIG REF: 001/ OTH REF: 001/ ATD PRESS: 5115

Card 2/2

L 17931-65 EWT(m)/EWA(d)/EWP(t)/EWP(k)/EWP(b) Pf-4 AFTC(p)/ASD-3/AFFTC JD/HW

ACCESSION NR: AR4048227 S/0137/64/000/009/D021/D021

SOURCE: Ref. zh. Metallurgiya, Abs. 9D132

B

AUTHOR: Kogos, A. M., Romanov, V. V.

TITLE: Mills built by VNIIMETMASh for cold rolling of thin and very thin strips 16 14

CITED SOURCE: Tr. Vses. n.-i. i proyektno-konstrukt. in-ta metallurg. mashinostr., sb. 12, 1964, 48-66

TOPIC TAGS: cold rolling, rolling mill, thin strip

TRANSLATION: The problem of producing thin and very thin strips was solved in the VNIIMETMASh by building cold rolling mills of two types of construction. The first type was designed for narrow strips with a ratio of strip width to its minimum thickness of b/h^{min} 4000. For narrow strips, 4-roller mills were built with feed drive through supporting rollers. The second type of mill is designed to roll strip with a ratio b/h^{min} from 4000 to 30000. To this end, mills were built with a multiroller construction. The construction of both the

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L 17931-65
ACCESSION NR: AR4048227 0

four and multiroller mills was examined in detail.

SUB CODE: MM ENCL: 00

Card 2/2

TONGUR, V.S.; VLADYCHENSKAYA, N.S.; ROMANOV, V.V.; VYSHEPAN, Ye.D.

Characteristics of RNA not extract able by pH 6,0 phenol from Escherichia coli. Biul. eksp. biol. i med. 57 no. 2:65-68 F '64. (MIRA 17:9)

1. Laboratoriya biokhimii nukleinovykh kislot Instituta biologicheskoy i meditsinskoy khimii AMN SSSR. Predstavlena deystvitel'nym chlenom AMN SSSR V.N.Orekhovichem.

KIRICHENKO, L.G. (Kislovodsk); ZHELEZNYAK, G.A., uchitel' (Selo Andreyevka, Poltavskaya oblast'); AL'SHITS, G.I. (Borovichi, Novgorodskaya oblast'); ROMANOV, V.Ya. (Sverdlovsk)

Letters to the editor. Zdorov'e 9 no.2:29 F '63. (MIRA 16:3)
(HYGIENE)

ROMANOV, V.Ya. (Polevskoy, Sverdlovskaya oblst')

Our Severski. Zdorov'e 5 no.4:11 Ap '59.

(MIRA 12:4)

(POLEVSKOY--PUBLIC HEALTH)

BIBERMAN, L.M.; ROMANOV, V.Ye.

On the mechanism of formation of continuous background in the emission spectrum of hot gases. Opt. i spektr. 3 no.6:646-648 D '57. (MIRA 11:2)

(Gases--Spectra)

ROMANOV, V.Ye.

Calculating the absorption cross section for a free electron in the field of a neutral hydrogen atom. Izv.vys.uch.zav.; fiz. no.4:91-97 '62. (MIRA 15:9)

1. Moskovskiy tekstil'nyy institut.
(Wave mechanics) (Electrons—Capture)

ROMANOV, V.Ye.

Establishing a continuously flowering garden in Leningrad. Gor. khoz. Mosk. 33 no.7:21 Jl '59. (MIRA 12:10)
(Leningrad--Flower shows)

ROMANOV, V.Ye.

Greenbelts, parks and landscape gardening in Leningrad. Gor. khoz. Mosk. 34 no.10:28-29 O '60. (MIRA 13:10)
(Leningrad--Landscape gardening)

Romanov, V. Ye.

51-6-15/25

AUTHORS: Biberman, L. M., and Romanov, V. Ye.

TITLE: On the Mechanism of Formation of Continuous Background in the Emission Spectrum of Hot Gases. (O mekhanizme obrazovaniya nepreryvnogo fona v spektre izlucheniya goryachikh gazov.)

PERIODICAL: Optika i Spektroskopiya, 1957, Vol. III, Nr. 6, pp. 646-648. (USSR)

ABSTRACT: It is usually assumed that continuous background in the emission of hot gases is due to recombination and radiation of electrons in the Coulomb fields of ions. There is, however, a systematic difference between the theoretical results calculated assuming the above process and experimental values. Such a difference is particularly noticeable in high-pressure arcs. The calculation of theoretical results based on the assumption of recombination emission (Ref.1) is thus only approximate. The present authors show that the systematic difference referred to above is due to neglection of radiation of electrons when moving in

On the Mechanism of Formation of Continuous Background in the Emission Spectrum of Hot Gases.

the field of neutral atoms (the so-called free-free transitions). The present authors regard the latter process as more important than recombination and radiation in the fields of ions. Chandrasekhar and Breen (Ref.12) discuss the problem of radiation of an electron in the field of a hydrogen atom in their studies of solar atmosphere. In a gas containing more complex atoms radiation of electrons in the atomic fields is even more effective than in hydrogen gas, and it is this process that accounts essentially for background emission in hot gases. Following Ref. 12 the authors neglect exchange and polarization of atoms by the fields of moving electrons, and they calculate the coefficient of absorption per one neutral atom and one bar of electron pressure, assuming Maxwell distribution of electron velocities. Born approximation for the wave-functions was used, and the charge density in a complex atom was approximately

On the Mechanism of Formation of Continuous Background in the Emission Spectrum of Hot Gases.

represented by a hydrogen-like distribution. It was found that the coefficient of absorption for a free-free transition of an electron in a field of a mercury atom is about two orders higher than the corresponding coefficient for hydrogen. This increasing absorption is due to a quadratic dependence of probability of absorption on the intensity of atomic field. As a concrete example, mercury spectrum of very-high-pressure lamps was studied. The table on p.648 gives the experimental values (col.6), and theoretical values obtained by Unsöld (Ref.1), Elenbaas (Ref.4) and the present authors (cols. 7,8 and 9 respectively) of the optical density of emission of four mercury lamps. Because of strong frequency dependence of the theoretical formula obtained by the present authors the values given in the table refer to only one wavelength of 6500 Å. The table shows clearly that the best agreement between experiment and theory is shown by

On the Mechanism of Formation of Continuous Background in the Emission Spectrum of Hot Gases.

the theoretical values obtained by the present authors. The authors thank Professor V. A. Fabrikant for his interest and criticism. There is 1 figure, 1 table and 14 references, of which 3 are English, 10 German and 1 Dutch.

ASSOCIATION: Moscow Power Institute. (Moskovskiy energeticheskiy institut).

SUBMITTED: March 29, 1957.

AVAILABLE: Library of Congress.

S/051/62/012/001/013/020
E032/E414

AUTHOR: Romanov, V.Ye.

TITLE: On the calculation of the cross-section for electron free-free transition in the field of a neutral hydrogen atom

PERIODICAL: Optika i spektroskopiya, v.12, no.1, 1962, 111-113

TEXT: S. Chandrasekhar and F. Breen (Ref.1: Astrophys. J., v.103, 1946, 41) were first to report accurate numerical calculations showing that electron free-free transitions in the field of a neutral hydrogen atom make the principal contribution to the absorption cross-section in the region $\lambda \gtrsim 10000$ Å. They also showed (Ref.2: Astrophys. J., v.104, 1946, 431) that it is sufficient to consider dipole transitions only. These are due to terms such as

$$(0, x_0^2 |\ddot{\varrho}| 1, x_1^2) \quad \text{and} \quad (1, x_0^2 |\ddot{\varrho}| 0, x_1^2).$$

The present author has used the Hulten variational method to calculate the absorption cross-section. For $l = 0$, the trial

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function was taken in the form suggested by Huang (Ref. 4: Phys. Rev., v. 76, 1949, 1878):

$$\chi_0(x^2,\rho)=A\left[\sin x\rho+(\lambda+be^{-\rho})(1-e^{-\rho})\cos x\rho\right] \qquad (5)$$

For $\ell = 1$, the trial function was taken to be

$$\chi_1(x^2,\rho) = B(1-e^{-\rho})\left[\frac{\sin x\rho+(1-e^{-\rho})^2(\mu+ae^{-\rho})\cos x\rho}{x\rho} - \cos x\rho + (\mu + ae^{-\rho})\sin x\rho\right] \qquad (6)$$

Calculations based on the above functions gave good agreement with the phases calculated numerically in Ref. 1. The final expression for the cross-section is

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$$\sigma = \frac{0.43 \cdot 10^{-25} \cdot \Theta^{5/2}}{\beta^6} \left\{ e^{-\beta^2(p-1)} \left(\frac{\beta^4}{p} - \frac{2\beta^2}{p^2} + \frac{2}{p^3} \right) + \right.$$

$$\left. + e^{-\beta^2 \cdot p} \left(\frac{\beta^2}{2p^2} + \frac{2}{p^3} \right) + \frac{3\sqrt{\pi}}{4p^2} \beta \Phi(\beta\sqrt{p}) \right\} \frac{cm^4}{dyne}, \qquad (8)$$

where $p = 1 + (0.21/\Theta)$, $\Theta = 5040/T$, $\beta^2 = h\nu/kT$ and $\Phi(x)$ is the error integral. This formula agrees with the calculations reported in Ref.1 and 2 to within 10 to 15%. There are 2 tables and 4 references: 1 Soviet-bloc and 3 non-Soviet-bloc. The three references to English language publications are quoted in the text.

SUBMITTED: January 31, 1961

Card 3/3

ROMANOV, V.Ye.

Calculation of the cross section for free-free electron transitions in the field of a neutral hydrogen atom. Opt. i spektr. 12 no.1:111-113 Ja '62. (MIRA 15:2)
(Quantum theory)
(Hydrogen)

S/139/62/000/004/007/018
E032/E514

24.6600

AUTHOR: Romanov, V.Ye.

TITLE: Calculation of the absorption cross-section of a free electron in the field of a neutral hydrogen atom

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, no.4, 1962, 91-97

TEXT: It is pointed out that one of the difficulties of solving this problem, apart from the considerable numerical difficulties, is the solution of the radial part of the corresponding wave equation. Following a suggestion of L. M. Biberman the author has used a variational method in which the wave function of an incident electron with $\ell = 0$ is computed with the aid of the trial function (Huang. Phys. Rev., 76, 1878, 1949):

$$\chi_0(x,\rho) = A\left[\sin x\rho + (\lambda + be^{-\rho})(1 - e^{-\rho}) \cos x\rho\right], \quad (11)$$

where $x = ka$; $\rho = r/a$; $a = h^2/4\pi^2 me^2$. Substitution of this trial function into the expression

$$I = \int_0^\infty \chi_0(x,\rho)\left[\frac{d^2}{d\rho^2} + x^2 + 2\left(1 + \frac{1}{\rho}\right)e^{-2\rho}\right]\chi_0(x,\rho)\, d\rho, \quad (13)$$

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yielded a quadratic equation relating the unknown parameters λ and b. Application of the Hulten conditions

$$I = 0; \quad \frac{\partial I}{\partial b} = 0 \quad \text{with} \quad \begin{matrix} \lambda = \tan \eta_0, \\ A = \cos \eta_0, \end{matrix} \tag{14}$$

was then used to determine the parameters λ and b and hence the required phase η_0. The resulting values for the phase were found to be in excellent agreement with the exact numerical calculations carried out by S. Chandrasekhar and F. Breen (The Astrophysical Journal, 104, 431, 1946). In the case of $\ell = 1$, use was made of a trial function of the form

$$\chi_1(x,\rho) = B(1-e^{-\rho})\left[\frac{\sin x\rho + (\mu + ae^{-\rho})(1 - e^{-\rho})^2 \cos x\rho}{x\rho} - \right.$$
$$\left. - \cos x\rho + (\mu + ae^{-\rho})\sin x\rho\right], \tag{16}$$

and the computed phases η_1 were again found to be in good agreement with the Chandrasekhar-Breen calculations. The $\ell = 0,1$ wave functions and the phases η_0 and η_1 were then used to compute the acceleration matrix elements which enter into the expression for the absorption cross-section for dipole (0-1) and

(1-0) transitions. The final results for the absorption cross-section are found to agree with the numerical calculations of Chandrasekhar and Breen to better than 10% (temperature range 7200-2520°K). It is stated that the exchange and polarization effects will be taken into account later. There are 3 tables.

ASSOCIATION: Moskovskiy tekstil'nyy institut
(Moscow Textile Institute)

SUBMITTED: February 2, 1961

Card 3/3

ROMANOV, V.Ye., gidrotekhnik

Long-furrow irrigation. Gidr. i mel. 13 no.4:3-9 Ap '61.
(MIRA 14:4)
(Bataysk region—Irrigation)

ROMANOV, Ya.

Preventing the waste dumping of valuable raw materials. Mast.prom. i khud.promys. 4 no.2:18-19 F '63. (MIRA 16:2)

USSR/Human and Animal Morphology - Normal and Pathological. S
Pathological Anatomy.

Abs Jour : Ref Zhur Biol., No 23, 1958, 106036

Author : Romanov, Ya.M.

Inst : Ivanovo Medical Institute

Title : Dynamics of the Morphological Changes of the Stomach Wall and Its Intramural Nervous Apparatus in an Experimentally Induced Ulcerative Process

Orig Pub : Sb. nauchn. tr. Ivanovsk. med. in-ta, 1957, vyp. 12, 118-122

Abstract : In experiments on 20 dogs, in which sodium salicylate was introduced into one of the arteries leading to the stomach, it was demonstrated that, one hour after the operation, manifestations of irritation in the stomach wall and its intramural nervous apparatus are observed.

Card 1/2

ROMANOV, Ya.M.

Model of chronically active gastric ulcer. Sbor. nauch. trud. Ivan. gos. med. inst. no.27:5-125'62. (MIRA 16:8)
(STOMACH—ULCERS)

ROMANOV, Ya.M. (Ivanovo)

Pathomorphological changes and gastric disorders in dogs in experimental peptic ulcer. Pat.fiziol. i eksp.terap. 3 no.6:63 N-D '59.
(MIRA 13:3)

1. Iz Ivanovskogo gosudarstvennogo meditsinskogo instituta. Nauchnyy konsul'tant prof. S.S. Poltyrev.
(PEPTIC ULCER experimental)

ROMANOV, Ya. (g.Voronezh)

Mechanization should come first. Prom.koop. 13 no.8:38 Ag '59. (MIRA 12:12)
(Voronezh Province--Efficiency, Industrial)

ROMANOV, Ia

Aldanskaia ekspeditsiia Dobroleta. [Aldan expedition of Dobrolet]. (Vestnik vozdushnogo flota, 1926, no. 4, p.28-32).

DLC: TL504.V45

SO: Soviet Transportation and Communications, A Bibliography, Library of Congress Reference Department, Washington, 1952, Unclassified.

ROMANOV, Ya.M., dotsent

Functional disorders of the small intestine in experimental stomach ulcers. Sbor. nauch. trud. Ivan. gos. med. inst. no.25: 35-38 '62. (MIRA 17:5)

1. Ivanovskiy gosudarstvennyy meditsinskiy institut (rektor - dotsent Ya.M. Romanov); nauchnyy konsul'tant - prof. S.S. Poltyrev.

ROMANOV, Ya.M., dotsent; ISAKHANOV, M.P., dotsent

Organization and some results of the aid to the public health organs from the staff of Ivanovo Medical Institute. Zdrav. Ros. Feder. 5 no.12:23-26 D '61. (MIRA 15:1)

1. Iz Ivanovskogo meditsinskogo instituta (rektor - dotsent Ya.M. Romanov).

(IVANOVO PROVINCE--PUBLIC HEALTH)

ANAN'YEV, S.L., prof., obshchiy red.; KURPOVICH, V.P., kand.tekhn.nauk, obshchiy red.; GROMOV, I.G., nauchnyy red.; ROMANOV, Ya.N., red.; SEMENOVA, Ye.P., tekhn.red.

[Workability of structures] Tekhnologichnost' konstruktsii. Moskva, Dom tekhniki, 1959. 452 p. (MIRA 12:8)
(Machinery--Design and construction)

ROMANOV, Ye., inzh.; FUNSHTEYN, E., inzh.

PZP-3 movable grain loader. Muk.-elev.prom. 26 no.7:11 Jl '60. (MIRA 13:8)

1. Gosudarstvennyy institut Promzernoproyekt.
(Loading and unloading)

ROMANOV, Ye., gvardii mayor.

They have been awarded decorations by brother nations. Sov.voin. 38 no.19:6 O '56. (MLRA 10:1)
(Morozov, Maksim) (Bondarchuk, Evgenii)

ROMANOV, Ye., inzh.; TSIRLIN, I., inzh.

Grain releasing system for loading railroad cars through the upper hatches. Muk.-elev. prom. 27 no.9:18-20 S '61. (MIRA 15:2)

1. Gosudarstvennyy institut po proyektirovaniyu predpriyatiy mukomol'no-krupyanoy i kombikormovoy promyshlennosti i elevatornoskladskogo khozyaystva.
(Grain elevators)
(Grain--Transportation)

ROMANOV, Ye., inzh.

Grain cleaner. Muk.-elev. prom. 24 no.7:31 Jl '58. (MIRA 11:10)
(Grain--Cleaning)

ROMANOV, Ye., mashinist ukladchik asfal'tobetona; SHKARIN, B.A., inzhener, konsul'tant; TAMAROVICH, M.A., redaktor; GUROVA, O.A., tekhnicheskiy redaktor.

[Quicker, better, cheaper; my practice in spreading asphalt concrete] Bystree, luchshe, deshevle; moi opyt ukladki asfal'tobetona. Moskva, Izd-vo Ministerstva kommunal'nogo khoziaistva RSFSR, 1954. (MLRA 8:1)
(Pavements, Asphalt)

ROMANOV, Ye. I., Engineer

"Induction Heating of Steel Blanks for Forging and Stamping of Bearing Races." Sub 8 Jun 51, Moscow Order of Lenin Power Engineering Inst imeni V. M. Molotov

Dissertations presented for science and engineering degrees in Moscow during 1951.

SO: Sum. No. 480, 9 May 55

VASIL'YEV, O.F. (Novosibirsk); VOYNOV, A.K. (Novosibirsk); ROMANOV, Ye. M. (Novosibirsk)

Experimental investigation of quicksand flow in a stratum. Izv. AN SSSR. Mekh. i mashinostr. no. 2:179-182 Mr-Ap '64. (MIRA 17:5)

NEYMAN, V.B.; ROMANOV, Ye.M.; CHERNOV, V.M.

Ivan Osipovich IArkovskii. Zem. i vsel. 1 no.4:63-64 Jl-Ag '65.
(MIRA 18:12)

1. Chleny Vsesoyuznogo astronomo-geodezicheskogo obshchestva.

ACC NR: AP6032620 (N) SOURCE CODE: UR/0126/66/022/003/0415/0419

AUTHOR: Yesin, V. O.; Levit, V. I.; Romanov, Ye. P.; Smirnov, L. V.

ORG: Institute of the Physics of Metals, AN SSSR (Institut fiziki metallov AN SSSR)

TITLE: Orientation, purity and perfection of molybdenum single crystals grown by electron-beam zone melting

SOURCE: Fizika metallov i metallovedeniye, v. 22, no. 3, 1966, 415-419

TOPIC TAGS: single crystal, molybdenum single crystal, single crystal growing, electron beam ~~zone~~ melting, single crystal orientation, single crystal purity, single crystal structure, MOLYBDENUM, METAL ZONE MELTING

ABSTRACT: Molybdenum single crystals, 3 mm in diameter and 60—120 mm long, were grown by the zone-melting method in a vacuum of 10^{-6}—10^{-7} mm Hg with an electron-beam heat source. The initial material, polycrystalline commercial-grade (99.8%-pure) molybdenum wire had a ratio of resistivities at 285 and 4.2K equal to 20. The orientations of the single crystals was found to depend on the rate of growing or on the rate of molten zone travel. No clear relationship was established between the single crystal perfection (the maximum disorientation angle between the elements of macromosaic substructure, maxθ') and the melting-zone speed at which the crystals were grown. A clear relationship, however, was found between the crystal perfection (max.θ') and its purity ($\rho_{285K}/\rho_{4.2K}$). The relationship can be empirically expressed

Card 1/2 UDC: 669.28:548.5